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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
28 March 2002 (28.03.2002)

PCT

(10) International Publication Number
WO 02/24275 A3

(51) International Patent Classification⁷: A61N 1/39

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(21) International Application Number: PCT/US01/29106

(22) International Filing Date:
14 September 2001 (14.09.2001)

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(US).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/663,606 18 September 2000 (18.09.2000) US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
ZA, ZW.

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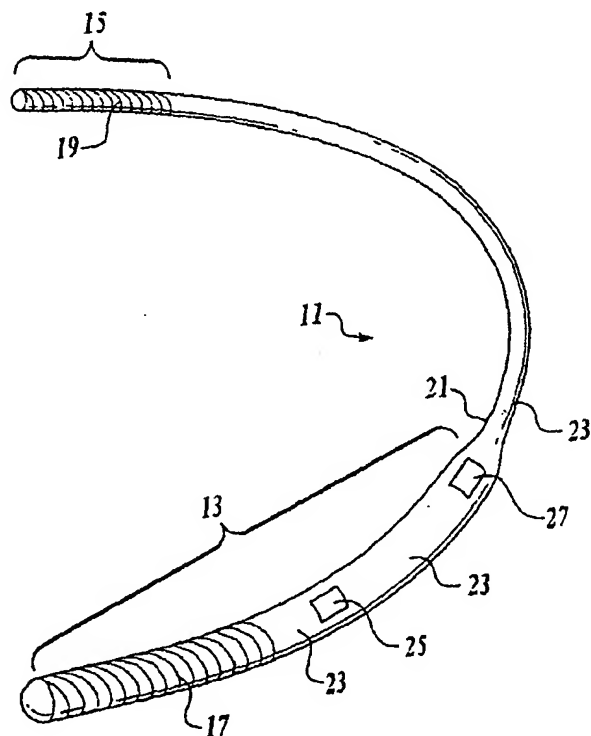
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European

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[Continued on next page]

(54) Title: UNITARY SUBCUTANEOUS ONLY IMPLANTABLE CARDIOVERTER-DEBRILLATOR AND OPTIONAL PACER



(57) Abstract: A unitary subcutaneous implantable cardioverter-defibrillator is disclosed which has a long thin housing in the shape of a patient's rib. The housing contains a source of electrical energy, a capacitor, and operational circuitry that senses the presence of potentially fatal heart rhythms. Provided on the housing are cardioversion/defibrillation electrodes located to deliver electrical cardioversion-defibrillation energy when the operational circuitry senses a potentially fatal heart rhythm. The unitary subcutaneous implantable cardioverter-defibrillator does not have a transvenous, intracardiac, epicardial, or subcutaneous electrode.

WO 02/24275 A3



patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
30 May 2002

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/29106

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61N1/39

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|---|
| A | US 5 385 574 A (HAUSER ROBERT G ET AL) 31 January 1995 (1995-01-31) the whole document --- | 1, 35, 69, 85, 96, 102, 103, 105-108 |
| A | US 4 157 720 A (GREATBATCH WILSON) 12 June 1979 (1979-06-12) the whole document --- | 1, 35, 69, 85, 96, 102, 103, 105-108 |
| A | EP 0 627 237 A (TRABUCCO HECTOR OSVALDO ; GAVRIELIDES JORDAN (DE)) 7 December 1994 (1994-12-07) the whole document --- | 1, 35, 69, 85, 96, 102, 103, 105-108 |
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G document member of the same patent family

Date of the actual completion of the international search

14 March 2002

Date of mailing of the international search report

21/03/2002

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/29106

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|---|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | US 5 331 966 A (BENNETT TOM D ET AL) 26 July 1994 (1994-07-26) the whole document --- | 1, 35, 69, 85, 96, 102, 103, 105-108 |
| Y | WO 99 53991 A (ALZA CORP) 28 October 1999 (1999-10-28) the whole document --- | 113 |
| Y | US 6 093 173 A (BALCETA JOBERT P ET AL) 25 July 2000 (2000-07-25) the whole document --- | 113 |
| A | WO 97 29802 A (LOEB GERALD E ; RICHMOND FRANCES J R (CA); ADVANCED BIONICS CORP (U) 21 August 1997 (1997-08-21) the whole document ----- | 113 |

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-31,35-108

unitary subcutaneous implantable cardioverter-defibrillator

2. Claim : 113

apparatus for implanting an implantable
cardioverter-defibrillator

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/29106

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| US 5385574 | A | 31-01-1995 | US 5133353 A | 28-07-1992 |
| | | | AT 168024 T | 15-07-1998 |
| | | | AU 641224 B2 | 16-09-1993 |
| | | | AU 7354591 A | 07-11-1991 |
| | | | CA 2040800 A1 | 26-10-1991 |
| | | | DE 69129716 D1 | 13-08-1998 |
| | | | DE 69129716 T2 | 24-12-1998 |
| | | | DK 453761 T3 | 19-04-1999 |
| | | | EP 0453761 A1 | 30-10-1991 |
| | | | ES 2120411 T3 | 01-11-1998 |
| | | | JP 5064666 A | 19-03-1993 |
| | | | US 6157860 A | 05-12-2000 |
| | | | US 5713926 A | 03-02-1998 |
| | | | US 6280462 B1 | 28-08-2001 |
| | | | US 5916238 A | 29-06-1999 |
| US 4157720 | A | 12-06-1979 | AU 521296 B2 | 25-03-1982 |
| | | | AU 3986278 A | 20-03-1980 |
| | | | CA 1120548 A1 | 23-03-1982 |
| | | | DE 2840307 A1 | 29-03-1979 |
| | | | FR 2403075 A1 | 13-04-1979 |
| | | | GB 2004188 A , B | 28-03-1979 |
| | | | IL 55526 A | 31-03-1981 |
| | | | JP 54060791 A | 16-05-1979 |
| | | | MX 146747 A | 05-08-1982 |
| | | | NL 7809422 A | 20-03-1979 |
| | | | SE 7809645 A | 17-03-1979 |
| EP 0627237 | A | 07-12-1994 | US 5243977 A | 14-09-1993 |
| | | | EP 0627237 A1 | 07-12-1994 |
| US 5331966 | A | 26-07-1994 | AU 654552 B2 | 10-11-1994 |
| | | | AU 1750692 A | 02-11-1992 |
| | | | CA 2106378 A1 | 06-10-1992 |
| | | | DE 69210395 D1 | 05-06-1996 |
| | | | DE 69210395 T2 | 09-01-1997 |
| | | | EP 0578748 A1 | 19-01-1994 |
| | | | JP 2655204 B2 | 17-09-1997 |
| | | | JP 6505662 T | 30-06-1994 |
| | | | WO 9217240 A1 | 15-10-1992 |
| WO 9953991 | A | 28-10-1999 | AU 3748899 A | 08-11-1999 |
| | | | TW 442273 B | 23-06-2001 |
| | | | WO 9953991 A1 | 28-10-1999 |
| US 6093173 | A | 25-07-2000 | NONE | |
| WO 9729802 | A | 21-08-1997 | WO 9729802 A2 | 21-08-1997 |
| | | | US 6185455 B1 | 06-02-2001 |
| | | | US 6214032 B1 | 10-04-2001 |
| | | | US 6051017 A | 18-04-2000 |